5. DISCUSSION

A longitudinal descriptive study was conducted among patients subjected to hemodialysis to identify their level of stress and coping abilities of patients with end-stage renal disease.

5.1 Identification of the stress and stressors experienced by patients subjected to hemodialysis

It was found that most of the patients 111 (74%) experienced “Moderate Stress” in physical aspect of stress, whereas in psycho-social aspect of stress, majority of the patients 105 (70%) encountered “Mild Stress”. The overall stress score confirmed that most of the patients experienced “Moderate Stress”.

A similar study was conducted by Baldree et al (1982), the study results demonstrated that “Physical stressor” were more troublesome than that of psycho-social stressor and statistically significant at P< 0.001 level. The findings of this study revealed physical stressors were more stressful than psycho-social stressors.

A study conducted by Welch J.L. (1999) reveals that almost all stressors to become more intense over time, with some specific stressors increasing significantly. Patients perceived high level of stress towards psycho-social aspect of stress (Cristovo-1999), in comparison with physical aspect of stress.

Gurklis JAC (1998), study results depicts, that patients undergoing hemodialysis experienced high level of stress towards physiological aspect when compared with that of psycho social aspect of stress.
N. Almeid et al (2000) study shows that “Patients experienced stress regarding physical symptoms in comparison with psycho social symptoms”. According to Eichel (1986), Hemodialysis patients experience more physical stress”. The present study illustrated the same findings.

A study conducted by Merkus MP et al (1999) denotes that physical stressors were common for patients undergoing hemodialysis.

Lok P. (1996) stated that Limitation of physical activity was most troublesome stressor followed by decrease in social life. The study explored that “Physical Stressors “were more troublesome, with the mean score of 73.62 and SD of 9.31 when compared with psycho social stressors where their mean was 60.32 with SD of 4.81.

Financial impediment was often the most serious problem affecting the patients from low socio economic status. In this study, most of the patients could not continue their job due to physical restriction of their illness and the treatment regimen; time needed to attend hemodialysis and associated care. Family income dropped, especially for patients who were bread winners and also the cost of dialysis was a burden to the family. The standard of living of these families had drastically reduced as family resources are diverted to cover the cost of treatment and transportation for attending follow-up clinics and regular scheduled treatments (Chan et al 1992). In the present study, 82% of the patients underwent “Severe Stress” in relation to cost of hemodialysis.

Presence of arterial stick, limits the physical activities of the patients and when trying to perform minor physical activities generates trouble to the patients. This develops unpleasant feelings for the patients
after dialysis. Most of the patients avoid using the arm with presence of arterial or venous stick assuming that it may cause flow inadequacy during hemodialysis. This originated stress for the patient, if the stick is in the dominant hand; it further amplifies the stress for these patients. In this study, 61.3% Patients endured “Severe Stress” for the presence of arterial or venous stick.

Itching is the most important skin symptom in uremic patients. Itching was most severe during or after the hemodialysis. It was also increased during the periods of inactivity or bed rest. Circulating uremia and phosphate deposition are etiological factors for itching (Ulrich). In this study 53.3% patient’s manifested “Severe Stress” in relation to itching.

Fatigue is not uncommon for the end stage renal failure patients to experience before and after hemodialysis. End stage renal disease patients often suffer from anemia due to lack of hormone erythropoietin which stimulates bone marrow to produce red blood cells. The repeated dialysis, frequent loss of blood leads to decrease in hemoglobin level in hemodialysis patients. Additionally factors such as: hormone, iron depletion and uremia interferes with the reaction of hemoglobin (Gutch et al 1999). This leads to fatigue among patients subjected to hemodialysis. In current study 49.3% patients’ symptomized “Severe Stress” in relation to fatigue.

“Dietary compliance is a prerequisite for good maintenance and management of patients on hemodialysis, limited fluid intake and diet alters the habitual life-styles for most of the patients and becomes a main stressor” (Esther mok-2001). Limited intake of fluid has generated “Moderate Stress” for 82% of the patients. As the sodium is lost with
dialysis, the impulse of thirst increased and the urge to increase intake of fluid was increased. Moreover, in this State, the weather is hot usually for about 6-9 months in a year which specifically increases the need to compensate the fluid loss. Hence the fluid restriction becomes more stressful for these patients.

Most of these patients discontinued their job due to physical instability. Presence of arterial or venous stick again prevented the patients to perform their routine activities. In this study, 80.7% of patients revealed “Moderate Stress” for limitation of physical activities.

Length of treatment, each of hemodialysis cycle is for about 3-4hrs and the time to travel to and from unit, patient must spend 2-3 hours. On an average, they require 6-7 hours for a dialysis cycle. This disturbs the employed patients and the care giver. This had conceived “Moderate Stress” for 78.7% of patients.

Nausea is the sign of hypotension, which is due to fluid loss during hemodialysis. Patients may experience nausea in pre-dialysis period due to uremia. In this study 50.7% patients faced “Moderate Stress”.

Most of the patients fall in the age group of 51-60 years, so decreased ability to procreate was “Not Stressful” for these patients. Sexual dysfunction is frequent in the female hemodialysis population. It is strongly associated with increasing age, dyslipidemia and depression. (Peng Ys. et al 2005). Most of the patients “Never” exhibited stress for decrease in the sexual drive; only 6.7% elucidated “Moderate Stress”.

Uncertainty concerning future was not much stressful for these patients, 75.3% expressed “Mild Stress”. As the patients concern is
diverted to the management of financial resources and physical problems, they were not showing much concern about their future. But few patients worried about the future of their family as most of these patients were employed in the private organization.

Somatic symptoms are common in patients on dialysis, there was a strongest correlation of somatic symptoms in dialysis affect disturbance, and the therapy aimed at improving the affect may improve the symptoms (Barrett BJ et al – 2001). In this 67% of patients evidenced “Mild Stress” in relation to muscle cramp and 53% narrated “Very Mild Stress” pertaining to stiffening of joints.

5.2 Identification of coping abilities among patients subjected to hemodialysis

Patients with end stage renal disease should try to adapt to a chronic physical illness and the necessity in many ways of coping with dependence on a dialysis machine to stay alive. Adjustment in cognitive: emotional and behavioral terms are required by patients and their families (Senky 1993). The period of adjustment occurs over weeks and months and may be likened to a grief reaction (Cramond et al 1967) with depressive symptoms sometimes developing as part of this process.

Patients subjected to hemodialysis invoked stress in various aspects to overcome stress. They adopted few coping strategies. It had been classified as problem oriented method of coping in which the patient analyses intellectually and handles the situation to overcome stress. Whereas, in affective oriented method clients avoids the situation or tried to blame someone else, where they did not think intellectually.
The present study enumerated 83.3% patients “Rarely” adopted Problem-Oriented Method of coping to minimize their level of stress, whereas 73.3% patients used affective-oriented method “Rarely” to overcome stress.

“Patients subjected to hemodialysis used multiple coping methods, such as acceptance; optimism; maintaining control; seeking support to overcome physiological and psychological aspect of stress” (Gurklis 1995).

Result of study conducted by Courts N.F. (1994) suggested that “stress inoculation, education and counseling were effective in decreasing some problems for the patients subjected to hemodialysis”.

Tucker C.M. (1986), concluded that, nurses play a key role in group counseling to reduce stress among patients subjected to hemodialysis.

Cristaovao. F (1999), results depicted that patients perceived high level of stress and psycho-social stressors are as problematic as physiological. Patients used Problem-Oriented method more often than Affective Oriented Method, this study also demonstrated the similar result.

Fluid restriction was ranked as the highest psychological stressors and the top physiological stressors were: muscle cramp and fatigue. Patients used problem oriented coping method than affective oriented method. This study also represented and signified the same results as above. Worry, a component of affective oriented method was used by
65% of the patients who underwent hemodialysis. “Data suggests that male and female hemodialysis patients predominantly used emotion-focused coping strategies” (Blake C.W. 1996)

Hemodialysis patients adopted more problem-oriented method of coping than affective-oriented, which is consistent with the findings of Baldree et al (1982). “Coping effectiveness must be examined in the context in which problems occur without information about the social context. We would only have half the story; preferred coping must be appraised “related to a social or cultural group, values and norms.” (Lazarus & Folkman-1984). However, given the fact that geographical boundaries are becoming more fluid, understanding different cultural contexts is essential for supporting the range of patients that today’s health care systems typically have to cater too.

Welch JL et al (2001), the results of this study concludes that “at a time one or more psycho-social stressors were associated with greater use of problem solving, social support and avoidance coping”.

“Somatic symptoms are common among patients on chronic hemodialysis and they appear to be associated with emotional distress and that influences the perceived health status” (Alvarez et al 2001).

5.3 Prevalence of stress and coping among patients undergoing hemodialysis

In the present study, the prevalence of severity in the physical aspect of stress was high than psycho – social stressors. Blood loss is being the frequent cause of anemia and limited the clients from performing physical activities due to fatigue and this made them to perceive physical stressors were problematic as evidenced with the mean
score of 73.62. Consistent with this result Steven D. Weisbord et al 2005 revealed high score towards physical stressors than psycho – social aspect of stress.

Affective oriented methods of coping was frequently adopted by the patients to overcome stress to improve standard of living with the mean score of 54.02. This was influenced by the social and cultural context of people living in Tamilnadu.

5.4 Correlation of stress and coping ability among hemodialysis patients

The Pearson’s correlation co-efficient value was –0.282 which authenticated that there was a low negative correlation. This demonstrated that patients who experienced high stress acquired poor coping ability. This indicated that the individuality is associated with perceiving and responding to stressors. Moreover, a patient may respond strongly to even a large number of stressors, his/her repertoire of coping behaviors or degree of use of coping may be quite limited.

Kathleen S.B. et. al (1981), the results of the study reveals “sub scales of each instrument were significantly correlated with total score of each scale, but there were no significant relationship established between overall stress and coping scores.

Pearson’s correlation were computed to extend the relationships among stressors, coping methods and length of time spent on hemodialysis. Psycho social stressors were significantly associated with total stressors, affective-oriented and problem oriented coping methods. There was no significant association between overall stress and coping
scores. This may be due to difference in perception and response to stress (Esther Mok –et.al 2000).

5.5 **Association of stress with demographic variables**

Association was done using chi-square test. The result revealed that there was no significant difference in degrees of stress in association with demographic variables such as age; sex; religion; residence; education; income; marital status; type of family and size of family. The only difference found was: the patients who were unemployed encountered high stress than the patients working in private sector or Businessmen.

Baldree et.al (1982) stated patients, on dialysis for 1 to 3 years indicated the greatest amount of stress. The findings, of the present study interpreted that patients doing business expressed less stress than unemployed and private employees.

Association between stress and biological variable sketched: no significant difference were found in degrees of stress in association with duration of illness; number of times of dialysis; duration of Diabetes Mellitus; presence of Hypertension; Hemoglobin before and during dialysis.

There was a significant difference with frequency of dialysis, i.e. the patient underwent dialysis thrice a week encountered high level of stress than patients underwent hemodialysis twice a week at P<0.01 level. This is because the patient had to travel to and from the unit and the mode of travel was mostly by bus; cost of dialysis, time spent for dialysis; assuming the same positions for about 4-5hours and fatigue. All of these factors developed distress to the patients.
There was significant difference in degree of stress in association with diabetes mellitus and duration of hypertension. Patients suffering from diabetes mellitus experienced high level of stress than non-diabetic patients at P<0.05 level. Patients suffering from Diabetes endured lot of physical changes and already was on diet restrictions which led to loss of body mass. This further aggravated physical weakness and generated fatigue.

Patients with known hypertension and as the duration of hypertension increased, the level of stress also magnified. These patients were previously on food and fluid restriction and when they underwent hemodialysis it further added physical weakness, thereby increasing the level of stress.

The result of study conducted by Welch J.L. (1999) reveals that patients new to dialysis had relatively more stress. This was not the same in the current study when compared with the study mentioned above.

No significant difference was found in degrees of stress between males and females; married and unmarried patients; educational level; occupation and length of time of hemodialysis. The only difference exhibited was that patients who were more than 55 years of age encountered greater physiological stressors than those below 55 years of age at P<0.02 level(Baldree 1982) This present study’s outcome explored the same.

5.6 Association of coping ability with demographic variables

The association was performed and the result represented that there were no significant difference appraised between coping strategies in
association with age; sex; religion; residence; occupation; education; income; marital status; type of family and size of family.

There was no significant difference symbolized between coping methods in association with food habits; smoking; duration of smoking; alcoholism and duration of alcoholism. Duration of illness; number of times of dialysis; frequency of dialysis per week; duration of diabetes mellitus; hypertension and duration of hypertension.

There was significant difference exhibited among coping methods in association with diabetes mellitus. Patients with diabetes mellitus adopted better coping strategies to overcome stress. This demonstrated that the patients with pre-existing chronic illness learn to overcome stress by their experience.

Lindquist. R. et.al (1998) conducted study on coping strategies and quality of life explains that optimistic coping was the most widely used style by both men and women in dealing with stressful situation.

The result of the study conducted by Baldree et al (1982) shows the number of times dialysis increases, coping also increases. The current study outcome had not revealed the same.

“A study on coping strategies of hemodialysis patients by gender says that there was no significant difference between gender and coping strategies of patients subjected to hemodialysis”. (Blanke C.W. 1996). The present study portrayed the same findings.

“There was no significant association between coping styles and demographic variables”. (Esther Mok et. al 2000). This study results also signify the identical outcome.
Study findings of Kathleen (1981) denoted that there was no significant difference in association of coping with demographic variables. This study results inferred similar consummation.

5.7 Comparison of the stress and coping ability at different intervals of hemodialysis

The multiple statistical comparisons were examined between the different intervals of hemodialysis and overall stress.

In this study as the duration of dialysis increased, the level of stress and coping also amplified, which was statistically significant at P<0.001 level. This result demonstrated as the patients’ duration of dialysis inclined their stress level magnified in different aspects. As the patient accustomed with the illness and treatment regimen, the patient’s own experience provided an opportunity for him to enhance his coping ability by interaction with hemodialysis anonymous group and information from health care providers.

The present study was supported by Welch J.L. et.al 1999, with the result that “All stressors” become more intense over a period of time while some specific stressors increasing significantly. The similar result was illustrated by Baldree et.al 1982, where the long term hemodialysis patients used problem oriented coping methods significantly than affective oriented method of coping.

In the present study, this was possible because of the sample size; sufficient data and duration of dialysis which influenced the coping response were useful to explore the extent to which coping methods were successful in decreasing the amount of perceived stress.
A study conducted by Esther Mok, 2000 revealed that there is no relation elicited between the stress and the coping, length and time spent on hemodialysis. It might be that once patients’ are accustomed to dialysis routine and establish their coping behavior, the number of years on the dialysis program do not change the coping behavior significantly Little Wood et.al (1990).

Takakij et.al 2005 result shows that patients undergoing hemodialysis for long duration were with the relatively high income, the decrease of depression and anxiety accompanying a decrease of emotion oriented coping was greater as compared with other patients.

5.8 Ranking of the stress and coping abilities experienced by hemodialysis patients

The top five stressors encountered by hemodialysis patients in this study were cost of dialysis, fatigue, presence of arterial or venous stick, itching and limited fluid intake.

According to the study of Baldree et al (1982), Physiological stressors have an impact equal to that of psycho social stressors, but the study by Esther Mok (2001) shows the proportional physiological sub scale score mean was slightly higher than psycho social sub scale score, suggesting that physiological stressors were more important. The outcome of the current study also explored similar findings.

5.8.1 Cost Stressor

The cost of the dialysis ranked as the first stressor in this study. Financial difficulty was often the most serious problem affecting patients from low income families. In the present study, many patients lost their
jobs due to physical restriction of their illness and time needed to attend hemodialysis and associated care. Family income dropped frequently especially for patients who were the bread winners. Patients found the cost of dialysis was a burden over the family. Very often, the standard of living of these families had drastically reduced, as family resources were turned to cover the cost of treatment and transportation for attending follow-up clinics and regular scheduled treatments (Chan et.al 1992) which is different from study conducted by Esther Mok et al (2001) and Devin et.al (1990), which indicated that two life domains are very important to end stage renal disease patients. Firstly, physical well being and diet and secondly, work and finance. The difference in this was because most of the patient’s income was less than five thousand rupees per month. The whole family income had been allocated for the hemodialysis and ultimately placing the family in stress.

5.8.2 Fatigue Stressor

Fatigue is common for end stage renal failure. Patients manifested fatigue before and after hemodialysis and this was ranked as the second physical stressor. End stage renal disease patients often suffer from anemia. They lack the hormone erythropoietin, which stimulates the bone marrow to produce red blood cells. Repeated dialysis, frequent loss of blood during initiation and end of dialysis caused blood loss in chronic hemodialysis patients. Additionally, iron depletion and uremia are interfering with the reduction of hemoglobin (Gutch et al 1999).

Dialysis patients exhibited numerous symptoms some serious in terms of medical outcomes and all serious in terms of potential reductions in functioning and well - being. These patients’ reported fatigue due to anemia frequently and require management of common, non acute
symptoms to enhance long term benefits for hemodialysis patients (Curtin R B et.al 2002)

Fatigue was a highly prevalent symptom expressed by persons who live with chronic illness, including those with renal failure, who require maintenance hemodialysis. These patients encountered high level of fatigue, with correspondingly low level of vitality, in all the areas measured – general fatigue; physical fatigue; reduced motivation, and reduced activity and mental fatigue by adult hemodialysis patients. (MC Cann et.al 2000).

5.8.3 Arterial or venous stick

Presence of arterial or venous stick prevented the patients to perform physical activities. Patients were dependent on the caregiver for most of their needs. This created distress among chronic hemodialysis patients. This had ranked third place in the study. Moreover, it was troublesome if the patient had the stick in the dominant hand.

Whereas, presence of arterial or venous stick has ranked in the 14th place in the study conducted by Esther mok et al 2000 and 12th rank in research by Baldree et al 1982 and this difference in the rank order may vary in reduction to the perception of patients cultural difference and social supportive systems of the chronic hemodialysis patients.

Fistula thrombosis in a patient on maintenance hemodialysis is an important morbidity factor. Arterial / venous thrombotic events have been described as complication in patients on regular chronic hemodialysis (Jamshid Rooz beh et al 2006)
Due to the thrombotic event in the fistula site, patients have to undergo another surgery to create fistula, which induces stress among these patients. To maintain the patency of fistula, patients have to perform regular exercise and this increased pain and distress for the patients.

Vascular access procedures and the complications of fistula were major hurdles in achieving the goal of hemodialysis. The high frequency of new AV fistulas that are never useable for dialysis (primary failure) is either due to early thrombosis or due to lack of maturation. (Michael Allon et al 2002). This again created an unpleasant experience towards the hemodialysis.

Repeated AV fistula failure is common in elderly; short life expectancy patients (cancer); exhausted vascular networks (long term hemodialysis patients) and atherosclerotic patients (e.g. DM) or severely malnourished individuals (Bernald conoad 2004). These factors further augmented for physical distress along with the other problems.

Fistulas and grafts had their own potential complications. Among these can be “Steel Syndrome” in which tremendous amount of blood flow among the AV fistula took some amount of blood away from the hand. Thus the hand feels cold, painful, numb or “Tingly” at times. This is especially true when the fistula or graft is in the upper part of the arm rather than the forearms (Allon M et al 2000).

5.8.4 Itching

Pruritis is the next important skin symptom in uremic patients. Itching was often most severe during or after hemodialysis session but it
was also increased during periods of inactivity or bed rest. The cause of itching in dialysis patients is not well understood. Among suggested etiologic factors circulating uremic substance and phosphate depositions (Ulrich 2000) are common. Phosphorus is not effectively removed by dialysis. That’s why foods rich in phosphorous were restricted in renal diet. Dialysis patients were also prone to develop dry skin which could be a cause of itching. Using very hot water for bath and harsh soap cause dryness that lead to itching.

In the present study, itching ranked as the 4th physical stressor but was not among the top five stressors in the other three studies (Baldree et al 1982, Gurklis & Menke 1988, Lok 1996). Patients in the current study had assigned a higher ranking to itching because of the hot and very humid weather in Chennai which aggravated the itching. Whereas, the other studies were conducted in places with a cool and dry climate. But the study conducted by Esther Mok reveals the similar result of the present study. The problem can also be related to high levels of parathyroid hormones (PTH). Some people have found dramatic relief after having their parathyroid glands removed.

### 5.8.5 Limited fluid

When a person was diagnosed to have End Stage Renal Disease (ESRD). The patient had to undergo renal replacement therapy. Though the patients have been bound for hemodialysis they were insisted to limit the intake of fluid, which encountered severe stress to these patients, as water is the basic need of mankind.

Adding up to this, thirst is a frequent and stressful symptom pronounced by hemodialysis patients. Limited fluid intake and diet
altered the habitual lifestyles of most of the patients and became a main stressor. It is not only the practical problem of a dietary regimen that patients have to cope with but, also a radical change in the lifestyle. Limitation of fluid ranked fifth in the present study whereas stands first in Baldree et al 1982, Esther Mok 2000 and rank 2nd in the Gurklis & Menkey 1998 study.

As the climate of Chennai is hot and very humid, the intensity of thirst increased, which further added stress to the individual. The differences in ranking of the stressors may be found in the cultural patterns of socialization. Fluid and dietary compliance is a pre-requisite for good maintenance and management of patients on hemodialysis (Gutch et.al 1999).

### 5.9 Comparison of rank order of five most frequently identified stressors among hemodialysis patients in five studies:

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<td>Limitation of fluid</td>
<td>Feeling tired</td>
<td>Limitation of activity</td>
<td>Limitation of fluid</td>
<td>Cost factor</td>
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<tr>
<td>Muscle cramps</td>
<td>Limitation of fluid</td>
<td>Decrease in social life</td>
<td>Limitation of food</td>
<td>Fatigue</td>
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<td>Fatigue</td>
<td>Limitation of food</td>
<td>Uncertainty about future</td>
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<td>Limitation of food</td>
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The last five stressors ranked by the patients were **limitations of time and place for vacation; dependency on staff member; dependency of physicians; decrease ability to procreate and limited to styles of clothing.**

Majority of the patients were dependent and from rural areas, the financial status were limited and most of the time were spent on dialysis and associated care allowed and was not feasible for them to think and plan for the vacation with their family or friends.

Dependency on staff members and physicians were least bothering the patients, Hence patients judged these variables as, less troublesome during the course of dialysis.

“Caregivers in the dialysis unit have to consider hemodialysis patients experience of a sense of emotional distance in their relationship to the caregivers” (Hagren B 2005).

Moreover, the relationship of the patients with physicians and nurses were not professionally supportive for the patients because:

a) The ratio of patient: nurse had not met the prescribed norms, this conceived burnout among nurses.

b) The high turnover of nurses in the dialysis unit.

c) Nurse’s poor understanding of the patients needs in the dialysis centre.
Majority of patients fall above the age group of 51 years according to “Maslow’s Hierarchy”. This is the age for the self actualization which never generated stress for hemodialysis patients.

Esther Mok et al 2000 study result reveals that decreased ability to procreate has been placed in the 26th rank of stressor whereas in the present study, patients judged as the least stressor. The same result was found in the study conducted by (Baldree et al 1982).

Limited to styles of clothing had been judged as the last stressor by the hemodialysis patients. This had not created much stress among the patients because of the cultural pattern. Apart from this, the age of patients, residence in rural and the problems faced by the patients due to hemodialysis made the patients to identify this as last stressor.

Patients undergoing hemodialysis encountered stress by different ways, to overcome this stress; they have adopted certain coping methods. The five top rank coping methods were: worry; pray; seek comfort or help from family or friends; cry or get depressed and resign yourself from the situation because it’s your fate.

Hemodialysis patients in the present study adopted more of the affective oriented coping methods, whereas the study conducted by Buldree et al 1982, Esther Mok. 2000 demonstrated that Patients often used problem oriented method of coping to overcome stress.

The first ranked coping method was “worry”, when compared with the previous study, more frequently rated coping method is acceptance of the situation because little could be done. Esther Mok et al 2000.
Coping effectiveness must be examined in the context in which problem occurs. Without information about the social context, we would only have half the story. Preferred coping methods must be appraised related to the social or cultural groups; values; norms; worldwide; symbols and orientation (Lazarus and Folkman 1984). However, given the fact that geographical boundaries are becoming more fluid, understanding different cultural context is essential for supporting the range of patients that today’s health care system typically have to cater on.

Length of time on dialysis was less for majority of patients as they were novice to the hemodialysis. These patients could not analyze the problems and find a solution for the same where cultural and social context had influenced the patient to land up into worry.

Again, this is a cultural and social context of human being in this country: pray to overcome the difficulties faced by them in their life. In the same way, patient undergoing hemodialyses were uncertain about their life and future. Hence, they pray to god and thus they ranked this coping method as second. Both chronic and acutely ill patients concentrate on the elements of hope, control and constructive problem solving in coping with stress. Praying is another commonly acknowledgeable coping tool (Jalowiec and Powers, 1981).

Greensburg cum et al 1975 also reported that hemodialysis patients used religion as an avenue for dealing with stress. The finding of the present study demonstrated that when the patients were diagnosed to have chronic illness they were emotionally disturbed. They need to be dependent on the social supportive systems which made them to rank as the third coping method. Despite the fact that most patients with chronic
illness suffer at least some adverse psychological reactions as a result of the disease, majority of them do not seek formal psychological treatment for these symptoms. Instead they draw on their internal and social resources for solving problems and alleviating the psychological distress.

For chronically ill patients, illness can entail a loss of social context, depleted support resources and estrangement from social network. Conley et al 1981 reported that major sources of support for hemodialysis patients are family members, friends, health care professionals and neighbours. They also suggested that perceived social support improves the psychological well being of the dialysis patients.

Here patients underwent hemodialysis were not able to fulfill their needs. So they sought help from the family members to maintain their optimal standard of living and to reduce their level of stress. These patients try to ventilate their emotional distress to their friends or spouses, who were playing the pivotal role for hemodialysis and associated care. Various indices of the quality of social support have been associated with more favourable psychological adjustment among ESRD patients” (Christeen et al 1989, Kimmel et al 1995, Shulman et al 1987).

“A supportive family environment has been identified as a particularly important source of social support for chronically ill individuals”, (Christensen et al 1989, Turner 1994) and the outcome of the present study exemplified that, i.e. when the patients were diagnosed to have chronic illness and they were emotionally disturbed. They badly need to be dependant on the social supportive system, which made them to rank this as 3rd coping method. Whereas the result of the study by Baldree et al 1982 reveals that patients had ranked this coping method in the 14th place.
Depression is a common and often debilitating reaction to chronic illness up to one third of all medical patients with chronic disease regret at least moderate symptoms of depressions and up to one quarter suffers from severe depression (Rodin Oshart, 1986). Although there is evidence that depression may occur somewhat later in the adjustment process than denial or severe anxiety, it can also occur intermittently (Taylor et al, 1991).

Cry and getting depressed were ranked 4th in the current study. It implied that patients were not analyzing the problem intellectually. This is due to the non-acceptance of such chronic diagnosis which disrupted their total family environment, social identity and threatened personal control. The results of the study by (Chen Y-S 2003) reveal that depression in chronic hemodialysis patients were not a result of the physical condition but a result of psychosocial problems indicating a need for psychosocial support.

Depression is especially common among patients experiencing lack of appropriate donor; lack of financial support and unsuccessful transplant (Christensen et. al 1989). Psychological distress and disorders represent a significant determinant to end stage renal disease towards patient’s quality of life. The levels of depression were comparatively high in end stage renal disease patients than the other chronic illness (Cassileth et al 1984).

The rate of psychiatric disorders in the ESRD population is substantially higher than that observed in other chronic medical condition (Kimmel et al 1998). Depression being a clear determinant to patient’s quality of life, several studies suggests that it may also be related to earlier patient mortality (Burton et al 1986; Peterson et al 1991, Shilllman
A diagnosis of ESRD entails a variety of chronic, recurrent stressors, significant change in lifestyle; disruption of familial roles and social identity and threatened personal control. (Hauman et al 1989). In the present study Resigning from Situation is because it’s their fate ranked as 5th coping method adopted by the patients to overcome stress.

A range of clinical, socio demographic and psychosocial factors have been correlated to ESRD patient’s adherence behavior. The availability on the perceived quality of social resources is important correlates of regimen adherence (Kulik et al 1993; B.S. Wallston 1983). When the patients fail to adhere the treatment and the side effects related to dialysis this enabled the patients to resign from the situation and made them to feel it is their fate.

Patients holding perception of a more supportive family environment, characterized by greater cohesion and expressiveness among family members and less intra family conflict exhibited significantly more favorable adherence to dialysis associated care (Christensen et al 1992).

Personality influences the individuals to take appropriate decisions when they face challenges in life. When people land up in chronic illness which is life-threatening like ESRD, a person with good personality traits will analyze the problems intellectually and adhere to the treatment and the associated care. When this trait fails the patient tends to avoid the situation and justifies it as his/her fate.

The least of coping methods identified by the patients were set **specific goals to solve the problems, meditation/yoga, break**
**Discussion**

the problems down into smaller pieces, drink alcoholic beverages and taking drugs. Majority of the patients adopted affective oriented methods of coping to overcome the stress during the course of hemodialysis. These were from the rural area, so their exposure to the social context was minimal and they could not think intellectually.

Thus, they would have rendered both the set specific goals to solve the problem, break the problem into smaller pieces as one among the least adopted coping methods. Meditation/yoga was known to be a good method to reduce stress and to lead a quality life. Patients could not adopt this as they had spent most of the time for dialysis and associated care and for transportation to and from the unit. A most of the patients were from rural area where they did not have the facility to practice yoga.

Drinking alcoholic beverages and taking drugs were also ranked low. Since, some of these methods may be considered as socially acceptable responses to difficult situation (Baldree et al 1982) but, the patients on hemodialysis must restrict fluid intake, drinking even limited quantities of alcohol may not be an option. In the Indian social context, the patients were already burdened with the financial status for maintenance of the dialysis over to this if they adopt such coping methods further it may pave way to increase the level of stress.
5.11 Identification of factors influencing stress and coping of hemodialysis patients.

Linear multiple regression analysis was used to find the relationship between the demographic, habit, biological variables and hemoglobin levels with stress and coping.

As the income of the family increased the overall stress of the patients decreased, in comparison with the low income group. Few variables like age, residence, occupation etc with the overall stress had positive relationship and rest of other variables like sex, religion, marital status etc had negative relationship and was not statistically significant.

5.12 The subscales of the stress and its relationship

There was a positive relationship with the size of the family which means, as the number of members in the family increased, the level of stress increased. This was because the patient did not have the privacy to take rest. There was also positive relationship with the education. As the patients were educated they kept brooding over the problems of dialysis and their complication which amplified the stress. When the income of the family increases, the psychosocial stressor decreases because cost of dialysis is the major problem for dialysis patients. (Mok 2000, et al & Baldree et al 1981). Patients residing in the urban experienced more psychosocial distress when compared with the rural people. As today’s life has become more mechanical, these patients could not find people to discuss and ventilate their problems.
There was no statistically significant relationship between overall coping with demographic variables. Whereas, there was a significant positive relationship with level of education and problem oriented method of coping. As the education of patients increased, they analyzed the problem intellectually and tried to find the solution for their problems.

The relationship of overall stress with biological variables inferred that for known hypertensive patients, as the duration of hypertension increased their level of stress magnified. All these patients were already on restriction of food and sodium intake which led to many physiological changes and aggravated their stress.

The physical stressors which is the subscale of stress had a positive relationship with frequency of dialysis; presence and duration of hypertension. As the frequency of dialysis increased the level of stress accelerated. This revealed that as the patient had been frequently exposed to hemodialysis, they were punctured at the fistula site which induced pain and led to loss of blood. At the same time, most of the patients were residing in rural area the frequent transport to and from dialysis unit caused fatigue. Positive relationship was elicited with duration of illness. As the duration of illness extended, patient’s psychological problems multiplied which disrupted the emotional stability of the patient.

The negative relationship was inferred between the overall stress score and hemoglobin in the pre and during dialytic stage. As the hemoglobin level decreased, the level of overall stress inclined and whereas in the subscale of physical stressor, despite the increase in the hemoglobin level, the physical stressor increased. The psychosocial aspect of stressor reveals the negative relationship during the predialytic stage and positive relationship during the period of dialysis.
The overall coping score illustrated that in the predialytic stage the increased level of hemoglobin had a positive impact towards the coping. And the similar results were revealed in the subscales like problem oriented and affective oriented methods of coping. During the period of dialysis, in spite of increased hemoglobin level they have no influence towards coping positively.

Even though there were few variables which had relationship and is statistically significant at different levels, but in the same way most of the variables were having positive and negative relationship with stress and coping which could not be statistically proved. This may be due to the result of the patients’ perception and response to problems encountered by them during the disease process.

5.13 The other stressors identified by the investigator were:

A. Frequent introduction of staff in the unit (High turnover of nurses).
B. Staff was desensitized to patients needs.
C. Noise in the unit.
D. Too many health care providers in the unit.
E. Lack of awareness of health care needs among care providers.
F. Lack of psycho social supportive system in the unit (counsellor).
G. Dialysis schedule.

Globalization of health care services paved the way for brain drain of nurses and frequent change of staff among the department had resulted in high turnover of nurses in the hemodialysis unit. The novice nurses in the dialysis unit were unable to fulfill the needs of the patients and their families as these nurses were not trained specially to care hemodialysis patients, which also enhanced distress among these patients. As this unit
should be considered as an intensive unit, nurses should be trained competently enough to care for hemodialysis patients.

Few nurses were working for long duration in the dialysis unit was highly desensitized towards the problems of the patients as it had become routine for them. This seems to be the ignorance of the health care professionals towards the holistic approach of the patient care. So, nurses should be trained periodically to update and enhance their knowledge towards the patient welfare. Hence quality of care is not compromised.

The warning alarm of the dialysis machine was identified as a stressor, as these sounds were ignored by health care professionals frequently, this generated stress among patients. Apart from this, many a number of health care professionals were posted in the unit for training and frequent opening, closing of the doors in the unit further intensified the distress among the patients at dialysis unit.

As this institution conducts many educational programmes students from different departments (nursing, allied health sciences, psychology) were exposed to this unit for their clinical experience. The number of health care trainees was more than the patients. This created confusion to the patients to identify the appropriate person to clarify their doubts towards the dialysis and dialysis associated care and they felt their privacy was lost. Thereby they could not maintain the therapeutic relationship effectively.

Patients diagnosed to be chronic renal failure must be on maintenance hemodialysis and needs appropriate supportive systems to maintain optimal quality of life. A counseling unit should be established in the nephrology department where patients could be counseled for their
needs and problems. This will ensure privacy for the patients to discuss their issues related to dialysis and related problems.

The schedule for dialysis itself is a stressor where, the patient could not find convenient time for the dialysis. Though the schedule was planned, patients had to wait for the machine to be ready for dialysis.

Nurses working in this unit should be aware of the patient’s problems so that they can take necessary measures to control or minimize the existing stressors and prevent unidentified problems which will help to improve the standard of living.